

Table of Contents

Preface

Chapter 1: Experimental Research of Reinforcement Concrete and Composite Members and Structures

Experimental Verification of the Behavior of Protective Steel Liner of Concrete Containment	
A. Kohoutková, P. Bílý, J. Fládr and J. Vodička	3
Parameter Analysis of the Reinforcement for the Width and Spacing Control of the Early-Age Cracks in Concrete	
R. Sonnenschein, J. Bilčík and K. Gajdošová	14
Deterioration of Concrete by Leaching in Conditions of Long-Term Bending Performance - Simplified Theoretical Approach	
P. Paulík	28
Slenderness Influence on the Behavior of Composite Columns	
Š. Gramblička and A. Hrusovska	40
Long-Term Deformations of Strengthened Reinforced Concrete Linear Elements	
M. Krizma and L. Bolha	51
Strengthening of Short Circular Columns Using FRP Materials - Determining the Effect of Confinement	
V. Kostiha, F. Girgle, A. Kučerová and P. Štěpánek	61
Nonlinear Response of Approach Slab on Cyclic Loading	
K. Laco, V. Borzovič and K. Gajdošová	73
Elastic Buckling Moment of Continuous Composite Beams	
T. Živner, R. Aroch and M.M. Fabry	86
The Influence of Slab Concreting Sequence on a Continuous Composite Girder Bridge	
T. Živner, R. Aroch and M.M. Fabry	96
Composite C-C Columns by Utilizing of UHPFRC	
I. Hudoba	108
Reliability of Existing Concrete Bridges from the Aspect of the Reinforcement Corrosion	
P. Kotes, J. Vican, M. Brodňan and R.R. Nikolić	119
Influence of the Different Factors on Formation of Cracks on the Foundation Slabs, Concrete Pavements and Industrial Floors at an Early Stage - Parametric Study	
M. Ignacak and J. Šoltész	129
Secondary Effects of Prestressing at ULS on Hyperstatic Structures	
P. Pažma, V. Borzovič and J. Halvonik	138
Optimization of a Tunnel Lining Reinforced with FRP	
I. Laníková, P. Štěpánek and J. Venclovský	148
Analysis of the Effect of Elevated Temperature on Reliability of Shear Strengthened Concrete Beams	
P. Sabol and S. Priganc	160
Determination of Load-Carrying Capacity of Railway Steel and Concrete Composite Bridges	
J. Vican, J. Odrobinak and P. Kotes	172
Failure of Slender Concrete Columns of Loss of Stability	
V. Benko, P. Kendrický and T. Gúcky	185
Steel Core in Composite Steel-Concrete Columns	
J. Frolo and Š. Gramblička	195

Chapter 2: Design, Execution and Monitoring of Concrete Structures

Design and Execution of Watertight Concrete Constructions	
J. Bilčík, R. Sonnenschein and K. Gajdošová	209

Design of Slender Concrete Columns L. Fillo, V. Knapcová and T. Augustín	220
Minimisation of Water Content in Concrete I. Juriček and L. Fillo	230
Reliability Assessment of Bridge Column under Accidental Impact J. Marková and K. Jung	239
Long-Term Effects Monitoring on Prestressed Concrete Bridge M. Moravcik and L. Krkoska	250
Long-Term Monitoring of Composite Bridge across Odra River on the D47 Freeway M. Zich, P. Daněk and B. Slánský	259
High Performance Concrete for Environmentally Efficient Building Structures P. Hájek, C. Fiala and A. Lupíšek	272
Analysis of Cylindrical Tanks under the Seismic Load N. Jendzelovsky and L. Baláž	285
Physical and Chemical State of the Concrete Piers of the Former Franz Joseph Bridge Built in 1891 I. Janotka, P. Paulík, P. Ševčík and M. Bačuvčík	297
The Crack Development Mechanism of Prestressed Girder Influenced by Different Bond between Prestressed Tendons and Concrete V. Borzovič, J. Laco, M. Pecník and P. Pažma	309
Study of Strengthening Flat Slabs against Punching by Additional Column Heads J. Nováček and M. Zich	321
Numerical Modeling of the Subsoil-Structure Interaction J. Vaskova and R. Čajka	333
Determination of the Dynamic Modulus of Elasticity and the Thickness of Concrete Structures by Non-Destructive Methods M. Pokorný, N. Jendzelovsky and L. Konecna	344
Bond of GFRP Reinforcement with Concrete I. Holly, J. Bilčík, O. Keseli and N. Gažovičová	356
Repeated Diagnostics of Maintained Prestressed Bridge Structure, Interpretation of Changes in Relation to Durability J. Kolísko, V. Vacek and S. Řeháček	366
Connections in Precast Concrete Elements I. Holly and I. Harvan	376
Design of Concrete Slabs Reinforcement – Methods of FEM Results Interpretation Incorporating Twisting Moments A. Bartók	388
Local Stress of Reinforced Concrete Elements I. Abrahoim	398
Fire Walls Made from Concrete and Masonry - Barriers against a Fire Spreading M. Bellová	408
The Quality and Reliability in the Structural Design, Production, Execution and Maintenance of the Precast Residential Buildings in Poland in the Past and Now P. Knyziak	420